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ABSTRACT

The relationship between preschool children's level of gender understanding and their ability to identify gender-linked attributes was examined. Participants were 26 3-year-old and 30 4-year-old children who were administered a single-cue gender labelling task, Slaby and Frey's (1975) gender constancy test, and the Peabody Picture Vocabulary Test. On the gender labelling task, 12 gender-linked cues were presented in conjunction with a 28-centimeter tall cardboard doll; social or physical cues were designed to enable identification of the doll as a "mommy" or a "daddy." On the gender constancy test, children were classified as being at one of three levels according to the extent to which they successfully answered questions related to identity, stability, and consistency. Results for the attributes of clothing and hair were generally consistent with those of previous investigations. Of the other four gender attributes, voice was most consistently identified across the age and sex of stimuli groupings. Body shape was not discriminated by 3-year-olds for the female stimulus, and both age groups had difficulty identifying the female face. It was also found that toys were the stimuli presenting the most difficulty for judgments of gender and that the physical or social natu e of cues had no effect on performance. Additionally, knowledge of gender-linked cues was found to be related to level of gender constancy and mental age. (RH)

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The Relation Between Gender Labelling and Gender Constancy in Preschool Children

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The cognitive-developmental perspective on children's gender identity development continues to generate a steady stream of research. Most studies have focussed on the concept of "gender understanding" (Eaton & Von Bargen, 1981) or constancy--the belief that one's gender remains invariant despite superficial transformations in sex-typed attributes. Issues investigated have included the explication of the gender understanding sequence, assessment of the cognitive-developmental correlates of gender understanding, and the relation between gender understanding and other aspects of gender identity development.

In the present study, the relation between level of gender understanding and the ability to identify gender-linked attributes was examined in preschool children. Although knowledge of gender-linked attributes and the development of gender understanding would appear, intuitively, to be closely related, only one study has examined their relation. Kuhn, Nash, and Brucken (1978) found level of gender understanding to be correlated (r=.85) with knowledge of sex-stereotyped traits, activities, and future roles in 2- and 3-year-olds; however, their failure to control statistically for the potentially mediating influences of CA and MA makes it unclear if the relation between these two aspects of gender identity development is artifactual.

Twenty-six 3-year-olds (14 boys; 12 girls) with a mean age of 3.75 and 30 4-year-olds (14 boys; 16 girls) with a mean age of 4.75 participated in three tasks. The first was

a single-cue gender labelling task. With the aid of a 28 cm tall cardboard doll, neutral with regard to body shape, 12 gender-linked cues were presented in order to identify the doll as a "Mommy or a Daddy." Six cues were "social" attributes (clothes, hair, toys) and six cues were "physical" attributes (body shape, face, voice).[1] With the exception of body shape, there were four exemplars for each cue (2 male; 2 female). Half the children were exposed to one male and one female exemplar; the other half, to the other male and female exemplars. The 12 cues were presented in one of four random orders. The order of the words "Mommy or Daddy" was counterbalanced across subjects.

Slaby and Frey's (1975) gender constancy test was administered next. Of the 56 children, 50 performed in a manner consistent with the stage-type pattern reported by Slaby and Frey; the records of the 6 other children were excluded from further analysis involving this task. Children were classified into one of three levels of gender constancy: low gender constant children (n=7) either failed all the questions or only passed the questions related to "identity"; medium gender constant children (n=26) passed the questions related to "identity" and "stability" but failed the "consistency" questions; high gender constant children (n=17) passed the questions related to "identity" and "stability" and at least one of the "consistency" questions. Following this task, the Peabody Picture Vocabulary Test (PPVT) was administered and it served as an index of MA.

It can be seen in Table 1 that the 3-year-olds identified successfully 7 of the 12 gender-linked cues and that the 4-year-olds identified successfully 10 of the 12 gender cues. There were no significant differences in accuracy as a function of cue type (social vs. physical), exemplar set, age, or sex of child. There were, however, some differences as a function of the sex of stimuli. Among the 3-year-olds, female hair was identified accurately more often than male hair and male body type and face were identified accurately more often than their respective female counterparts. Among the 4-year-olds, male toy and face were identified accurately more often than their respective female counterparts (all $ps < .05$).

To examine the relation between performance on the gender labelling and gender constancy tasks, a one-way ANOVA was performed, with gender constancy level serving as the independent variable and number of correctly identified cues as the dependent variable. A significant effect for gender constancy level ($F[2,47]=8.1$, $p < .001$) indicated that both high and medium gender constant children identified accurately more cues than low gender constant children, both $ps < .05$ (see Table 2). The difference between high and medium gender constant children approached significance, $p < .10$. An additional analysis with cue type (social vs. physical as a second independent variable yielded only a main effect for gender constancy level.

Correlational analyses indicated that MA, but not CA,

was significantly related to gender constancy level (see Table 3). Cue accuracy was less strongly related to MA and CA (Table 3). To control for the effects of MA, it was used as a covariate on the gender constancy and cue accuracy data. The results showed an effect similar to the one reported above, $F(2,46)=5.9$, $p < .006$ (see Table 2).

The results of this study both replicate and add to our knowledge of children's gender identity development. With regard to the identification of gender-linked attributes, the data for clothes and hair are generally consistent with a number of previous investigations (e.g., Katcher, 1955; Levin, Balistrier, & Schukit, 1972). The inability of our 3-year-olds to identify correctly male hair, we believe, was due to our failure to portray accurately this stimulus, rather than something more substantial such as a "cohort" effect. Although the 4-year-olds did identify male hair at a level better than chance, performance was still relatively poor compared to correct identification of female hair. The findings with regard to the remaining four gender attributes represent new information. No study to our knowledge has previously reported that children are capable of making judgments of gender on the basis of toy type, body type, face, or voice. Of these stimuli, voice was most consistently identified across the age and sex of stimuli groupings. Body shape was not discriminated only for the female stimulus at age three. Given that only the shoulder

to hip ratio was the varied dimension, it appears that the presence or absence of breasts and differences in the genitalia are not the only bodily attributes on which children can made judgments of gender (cf. Katcher, 1955; Levin et al., 1972; McConaghy, 1977, 1979). The female face was a difficult stimuli to identify for both age groups. Perhaps the absence of typical correlates of the female face (e.g., lipstick) contributed to this. Interestingly, the most difficult stimulus on which to make a judgment of gender was the toy. Although these stimuli are strongly sex-typed by college students and fourth-graders (Zucker, 1977), only the male toys at age four were used successfully to make a gender judgment. Our speculation with regard to the female toys is that the children may have assumed that either a mother or a father could be associated with a nurturant activity.

In addition to these findings, we find it interesting that the nature of the cues (physical vs. social) had no effect on performance. From an objective standpoint, one might argue that physical cues would be easier to judge since they are less subject to arbitrary categorizations as male or female. Apparently, preschool children are not yet sensitive to this distinction, as certain aspects of cognitive-developmental theory would predict (Kohlberg, 1966). It would be interesting to pursue the social-physical distinction with older children in terms of confidence judgments; that is, given a particular cue, to what extent is one confi-

dent that the target is male or female. Presumably, social cues would yield somewhat lower confidence judgments than would physical cues (cf. Thompson & Bentler, 1971).

The finding that knowledge of gender-linked cues was related to level of gender constancy, even with mental age controlled, adds to the construct validity of the gender constancy concept. It appears that the relation between these two variables goes beyond simple covariation with general cognitive development, at least as assessed by the PPVT (cf. Kuhn et al., 1978).

What is the significance of this finding? In some respects, the gender labelling task may be considered another type of gender constancy test, at least in part. The first "level" of Slaby and Frey's (1975) gender constancy task is essentially a male-female discrimination test (e.g, "Is this [picture] a man or a woman"). Given that the majority (5 of 7) of the low gender constant children did, in fact, pass all of the items related to identity, one must ask why their ability to identify gender cues in another context was poorer than the medium and high gender constant children. One possibility is that the identity questions on the Slaby and Frey task are easier, in that judgments of gender are based on multiple rather than single cues (e.g., in the case of identifying the gender of dolls, both hair and clothes are available). Another possibility is that the ability to "conserve" gender over time and situations, characteristics which comprise the second and third levels of the Slaby and

Frey task, implies a more elaborated understanding of gender attributes. It is possible, therefore, that the better performance of the medium and high gender constant children on the gender labelling task reflects a heightened sensitivity to gender related cues.

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Footnote

[1] Colored paper or cloth replicas of clothing and hair were attached to the doll. Colored photographs of sex-typed toys (football and helmet, truck, baby carriage, baby doll) were placed in front of the doll. Adult voices saying "Hello, how are you?" were presented on a tape-recorder. Black and white photographs of adult faces, with no facial or cranial hair or make-up, were attached to the doll's face. For body shape, the neutral doll was replaced with a masculine or feminine shaped cardboard doll, in which the shoulder to hip ratio was varied.

Table 1: Cue Accuracy (in %) as a Function of Age and Sex of Stimuli

	Age Group			
	3 (n=26)		4 (n=30)	
Cue	Male stimuli	Female stimuli	Male stimuli	Female stimuli
Clothes	92.3*	100.0*	93.3*	96.7*
Hair	65.4	92.3*	76.7*	96.7*
Toy	61.5	53.8	86.7*	50.0
Body Type	88.5*	57.7	80.0*	76.7*
Face	92.3*	61.5	90.0*	60.0
Voice	84.6*	88.5*	80.0*	70.0*

* $p < .05$, binomial test

Table 2: Cue Accuracy as a Function of Gender Constancy Level

	Gender Constancy Level					
	Low (n=7)		Medium (n=26)		High (n=17)	
Cue Accuracy	$\bar{X}$	SD	$\bar{X}$	SD	$\bar{X}$	SD
without covariate	8.00	1.63	9.42	1.27	10.17	0.88
with covariate (MA)	7.96	1.38	9.42	1.22	10.19	1.29

Note. Maximum value per cell = 12.

Table 3: Intercorrelations Between Gender Constancy Level, Cue Accuracy, Chronological Age, and Mental Age

	GCL	CAc	CA	MA
GCL	---			
CAc	.49**	---		
CA	.21	.12	---	
MA	.50**	.25*	.57**	---

Note. GCL=gender constancy level (1=low; 2=medium; 3=high); CAc=cue accuracy

** $p < .001$

* $p < .10$